



LXDRESEARCH
AT CHARLES RIVER MEDIA

MindPlay Reading Coach

ESSA Evidence Packet
Logic Model, Foundational
Literature Review & Study
Summaries



Author:

Rachel Schechter, Ph.D.

SEPTEMBER, 2023



Appropriate for all ages, our online reading program is self-paced and easy for students to use. It provides assessment-driven instruction and repeated opportunities for students to achieve mastery. Aligned to the Science of Reading, our lessons focus on the skills needed to become a proficient and skilled reader.

All instruction is based on Orton-Gillingham's structured literacy approach with content created by experts in speech and reading instruction. Plus, not only are we standards-aligned, **all lessons are delivered by certified speech pathologists** – right on the screen!

How We Work

All instruction is based on Orton-Gillingham's structured literacy approach with content created by experts in speech and reading instruction. Plus, not only are we standards-aligned, all lessons are delivered by certified speech pathologists – right on the screen!

We Advance the Development of Literacy Skills Using the 5 Science of Reading Components



Vocabulary

Ability to build, store, and retrieve the meaning of words



Phonics

Ability to connect speech sounds to letters and access them by sight



Comprehension

Ability to deduce meaning from text



Phonemic Awareness

Ability to recognize and manipulate sounds within words



Fluency

Ability to read text with speed and accuracy



MindPlay Virtual Reading Coach®
MindPlay Virtual Reading Coach® (MVRC)
is an educational software that includes
MindPlay's Universal Screener and
Reading Fluency programs.

Virtual Reading Coach assesses student reading abilities with MindPlay's Universal Screener and automatically develops a unique, differentiated syllabus of instruction and mastery-based activities for every student, thus improving their reading fluency.

Educators search for high-quality research and evidence-based interventions to strengthen grant applications, to support comprehensive and targeted schools, or to implement new programming in their schools. Evidence requirements under the Every Student Succeeds Act (ESSA) are designed to ensure that states, districts, and schools can identify programs, practices, products, and policies that work across various populations.

Educational programs document their evidence of design, effectiveness, and impact in order to be eligible for federal funding. While there is no singular authority that determines a program's tier, the Department of Education's Office of Educational Technology provides standards to assess the varying levels of strength of research for education products.

The categories for ESSA Evidence are: strong (Tier 1), moderate (Tier 2), and promising (Tier 3) evidence of effectiveness, or demonstrates a rationale to be effective (Tier 4).

This product meets the requirements for Tier 2:

- ✓ In a quasi-experimental design, students who used the program are examined against a comparison group through matching.
- ✓ At least one quasi-experimental study with the proper design and implementation with at least two teachers and a multi-site sample of 350 students showed statistically significant, positive findings.
- ✓ The study uses a program implementation that could be replicated.
- ★ A third-party research organization has reviewed the documentation for ESSA validation.



When product designers leverage learning sciences to design and evaluate the effectiveness of their programs, educators can better target instruction, and students' skills soar. Multiple, quasi-experimental studies using standardized assessment data, an analysis of student growth, and educator feedback demonstrates this product's efficacy, meeting the criteria for LXD Research's ESSA Tier 2 Evidence.

– Rachel Schechter, Ph.D., Founder of LXD Research

MindPlay Reading Foundational Research Summary

The journey to MindPlay Reading started back in 1981 when Judith Bliss founded Methods and Solutions, Inc. Being a dyslexic learner herself, Bliss wanted an effective reading system for students. In 1995, she met a Tucson-based reading specialist and speech pathologist, Jim Larrabee, and decided to create a software program modeled after Larrabee's successful reading methods.

Ever since, MindPlay has been focused on unlocking student success and radically improving the lives of all students (more about our timeline [here](#)). Through our history, we have expanded our approach to support learning across age groups (K-12, and adulthood), locations (classrooms, at home, prison learning facilities), and varying skill levels (on-level readers, struggling readers, and intervention-level support). At MindPlay, we incorporate research-based strategies into our instruction to ensure student learning and support skill mastery.

Explicit & Systematic Instruction

Our foundation has an emphasis on direct, structured literacy instruction designed in accordance with the Science of Reading. The MindPlay lessons cover content including comprehension, phonics, vocabulary and employ systematic and cumulative concepts to avoid knowledge gaps, prevent misconceptions, and promote learning (Bruce et al., 2009; Hunt et al., 2002; Castles et al., 2018; Rosenshine, 2009).

Our program includes multisensory phonics instruction that emphasizes letter-sound relationships for improved reading skill. Within the program, each lesson is delivered via video by a certified Speech Language Pathologist. As learners progress through the program, they complete activities that engage multiple senses for learning letters & sounds.

Systematic and explicit instruction provides clear and structured guidance to students, ensuring that they acquire foundational knowledge and skills in a systematic manner (Mesmer & Griffith, 2011). By breaking down complex concepts into manageable steps and providing explicit explanations, teachers can help students grasp new information more easily. This approach eliminates confusion and ambiguity, enabling students to build a solid foundation of understanding. Systematic and explicit instruction helps students develop automaticity and fluency. It ensures there are no gaps in knowledge and that all students receive the necessary support and scaffolding for learning, leading to improved academic achievement and empowering students with the tools they need for success.

MindPlay uses explicit and systematic instruction to present information to students. Skills build upon each other using a planned sequence of progressive skills. The explicit instruction includes modeling, providing students with frequent opportunities, and providing both guided and independent practice.

“Our passion for teaching reading started over 40 years ago, and our determination to teach everyone to read remains strong. We believe reading is the key to unlocking student potential and life-long success.”

Robert Sommers,
Chief Academic Officer
MindPlay Education



Differentiated Instruction

A central feature of MindPlay is that it identifies and targets specific gaps of each individual learner. Students complete the Universal Screener to identify where students need more support, and then complete only the lessons that target specific skills each student needs. MindPlay incorporates guided practice that is individualized and adaptable, providing opportunities for error correction and reinforcement of learning (Rosenshine, 2012). The aim is to meet learners in their unique zone of proximal development, working through lessons that challenge them appropriately and providing the support they need to master each new skill (APA, 2015). Students complete lessons in phases to pace instruction which is designed to reduce frustration and focus on growth.

Differentiated instruction recognizes and values the diverse needs, abilities, and interests of students (Watts-Taffe et al., 2012). By tailoring instruction to accommodate these differences, it ensures all students have access to meaningful and relevant learning experiences, which helps prevent achievement gaps and supports students who may be struggling or excelling in certain areas. This promotes equitable education

"In many classrooms, spoken sounds vary by the accents of the speakers, making it hard for students to pin down those sounds. MVRC pinpoints that sound for a student until they have it in their long-term memory. I have seen a huge improvement with my lowest to highest performing ELL students."

Grace Lueroas
Third Grade Teacher



by providing appropriate support and challenges to meet each student at their individual level (Dietrichson et al., 2021). Differentiated instruction also enhances student engagement and motivation by offering choice and flexibility in how they learn and demonstrate their understanding (Reis et al., 2011). This creates an inclusive and dynamic learning environment that meets the unique needs of all students, leading to enhanced learning outcomes and a positive educational experience.

MindPlay has 14-21 instructional presentations for each lesson. The lessons teach the same concept using a different instructional presentation. Students who need help with specific skills will not repeat the same task over and over again. A new instructional presentation is essential to student success and engagement.

Repeated, Individual Practice

Learners are encouraged to use the program regularly, engaging in daily review and repeated practice to develop mastery. This repetition of content allows learners to deepen their knowledge and gain increased automaticity in using new skills (Fazio et al., 2019; Karpicke et al., 2016). Opportunities for repeated practice are individualized for each student. By tailoring the learning experience to meet the specific needs of each student, individualized instruction ensures they receive instruction at a level and pace that suits them best (Connor et al., 2007; 2013). This personalized approach addresses learning differences and helps bridge gaps in understanding, preventing students from falling behind or feeling frustrated.

MindPlay uses pre- and post-testing to assign an individualized learning path for students and allow for practice opportunities. This ensures that students receive instruction that meets their specific needs; this closes gaps in knowledge and allows students to build on their strengths.

Mastery-based Learning

Mastery-based learning is essential because it offers personalized education, allowing students to progress at their own pace and fully understand each concept before moving on. Focusing on comprehension rather than memorization promotes critical thinking and problem-solving skills (Guskey, 2007), leading to higher achievement and a strong foundation of knowledge. Mastery-based learning also fosters self-motivation, confidence, and engagement, empowering students to take ownership of their learning (Essa & Laster, 2017). It equips them with lifelong learning skills and promotes inclusivity by accommodating diverse needs. Mastery-based learning facilitates deep understanding, individualized progress, and the development of essential skills.

MindPlay uses pre- and post-testing to ensure students have mastered concepts before moving on to more complex concepts. MindPlay believes mastery-based learning provides students with the foundational skills to grasp more complex concepts.

Gamification/Engagement/Motivation (Themes, Avatar, Achievements)

Gamification has the potential to motivate students by incorporating game elements and mechanics into the learning process. By making learning more enjoyable and interactive, gamification increases engagement and captures students' attention (Ertan & Kocadere, 2022). Clear goals and progression provide students with a sense of accomplishment as they advance, while healthy competition and collaboration foster motivation and peer interaction. Immediate feedback and rewards acknowledge students' achievements and allow them to track their progress (Gooch et al., 2016). The autonomy and opportunity for skill development within gamified environments enhance students' intrinsic motivation and sense of competence.

MindPlay Reading provides an awards framework of achievements recognizing student success in the program. Those rewards unlock the ability to customize their learning experience through Avatars and Themes. The student themes and avatars are highly customizable and embedded thoughtfully throughout the program. Achievements provide an equitable competitive dimension through Leaderboards and level crests that allow students to compare their efforts to their peers. The students discover their individualized learning plan as they journey through a world map customized to their theme.

Minimal Instructional View

Nonessential graphics like images, animations, or decorations that do not directly contribute to the educational content or learning objectives may distract or confuse learners. Excessive nonessential graphics can increase cognitive load, especially for complex topics (Darejeh et al., 2022). Graphics should align with learning objectives to enhance clarity and comprehension (Ally, 2008). It's important to strike a balance between engaging visuals and avoiding hindrances to learning.

MindPlay Reading takes special care to keep gamified and visually intense animations and artwork separate from the instructional view. Animations and celebrations of progress occur interim to the content and always provide adequate time for the student to come back to attention before continuing with critical instruction. High contrasting colors, negative space, and adequately kerned and sized fonts, images, and interactives allow motor, visual, and attention-impaired students to focus, interact, and navigate the program without distraction. In addition, we make accommodations for severely impaired students by allowing teachers to turn off certain aspects of the program they find distracting for their students.



ESSA Level: 2, Moderate

Effect Size: 0.55

Grade: 2 (N=170)

Test: TOSWRF & Woodcock-Johnson

Location: Southwest, USA

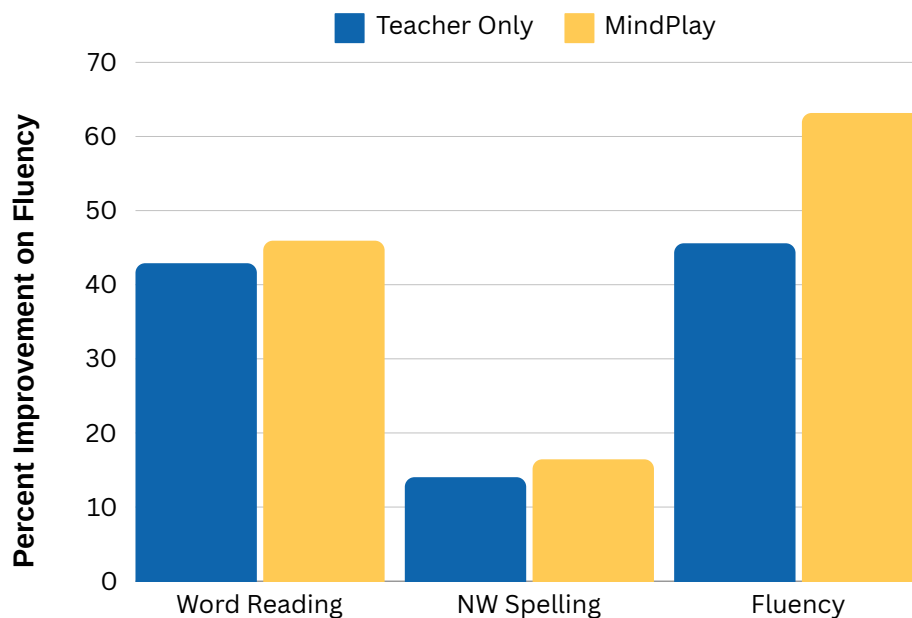
Population: Hispanic (82%),
Economic
Disadvantage (93%),
ELL (37%)

Two School Study in the Southwest

Pretest conditions favored the comparison group

This experimental study examined eight second-grade classrooms in two southwestern schools (two classrooms per school). Using the Test of Silent Word Reading Fluency and Woodcock-Johnson Tests of Achievement, researchers revealed differences between classrooms using Mindplay and those using regular daily instruction by the teacher. After using MindPlay for two hours per week across September-April, students showed higher achievement scores in real-word spelling, non-word spelling, and reading fluency. The reported mean effect size was 0.55. Notably, Fluency showed a 0.90 effect size.

MindPlay Students Outperformed Both Groups on Reading Fluency



Note: These percentages are estimates based on the published image



ESSA Level: 2, Moderate

Effect Size: 0.30

Grades: 2 & 4 (N=314)

Test: MindPlay's MVRC

Location: Ohio

Population: Urban
Economically
Disadvantaged

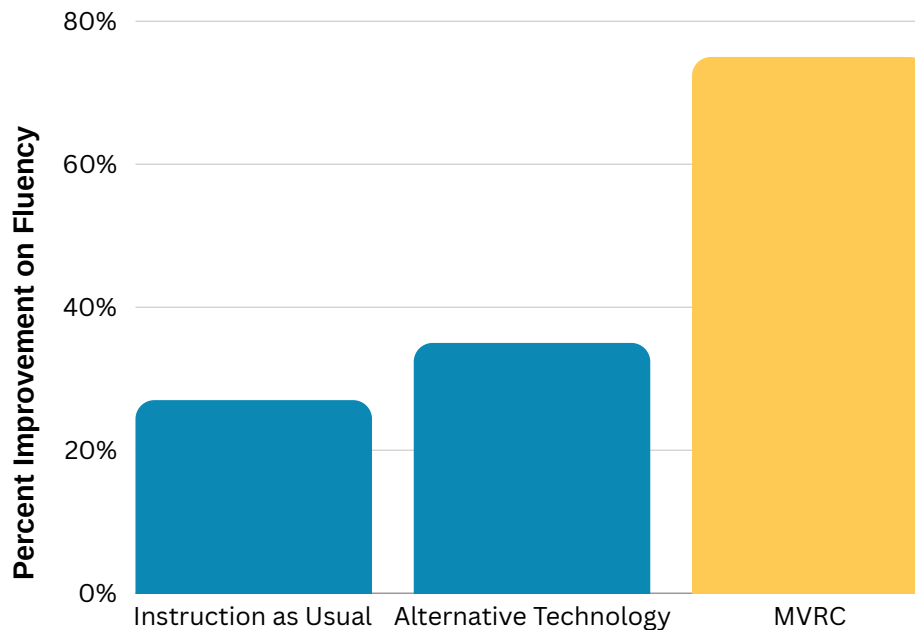
Ohio Multiple-District Study

Random Assignment using Product's Assessment

This 2019 study consisted of struggling readers using MindPlay Reading in two districts: Six second-grade classrooms and nine fourth-grade classrooms were randomly assigned to one of three conditions: (1) instruction as usual, (2) instruction with an alternative online reading program, and (3) instruction with MVRC. Complete data sets were available from 142 second-graders and 172 fourth-graders. Three assessments from the MVRC screener were used: fluency, phonic skills, and listening vocabulary, each before and after the intervention. Results show a clear advantage of MVRC on reading fluency when comparing to business as usual or alternative technology programs.

Note: This study is receiving ESSA Level 2 because the outcome test was part of the product's system.

MindPlay Students Outperformed Both Groups on Reading Fluency



Note: These percentages are estimates based on the published image



Grades: 3-9 (N=6,098)

Test: Ohio State Test Scores

Location: Ohio

Population: Urban
Economically
Disadvantaged

Validity of the MindPlay Virtual Reading Coach (MVRC)

This study used correlation calculations to measure the validity of MVRC. On average, students received an additional 60 hours of instruction, via the MindPlay program. The state ELA test was used to compare learning gains, across the year. Correlation effect sizes were calculated, based on the use of Mindplay and ELA state scores. Schools with failing grades had a Pearson effect size of .14, non -failing schools had a Pearson effect size of .19, and secondary schools had a Pearson effect size of .06. Overall a mean effect size of .13 was calculated. The results of this study suggested a negligible benefit for the use of MindPlay on ELA scores. However, it did also examine the validity of the MVRC screening tool, by comparing testing scores with the ELA state test, for which the effect size was .74. These results suggest a strong correlation between the two assessments.



ESSA Level: 3, Promising

Effect Size: 0.57

Grades: 3-6 (N=2,531)

Test: Ohio State Test Scores

Location: Ohio

Population: Urban
Economically
Disadvantaged

Relationship between time using MindPlay Reading and State Test Scores

This study examined the correlations between the amount of time students used the MindPlay program and state test scores. To conduct this analysis, one district provided data from elementary schools that used the MVRC program in Grades 2 to 6. This analysis showed an effect size of .57, suggesting that the more time students spent using the MindPlay program, the better they did on state ELA tests.



Grades: K-3 (N=37)

Test: KTEA

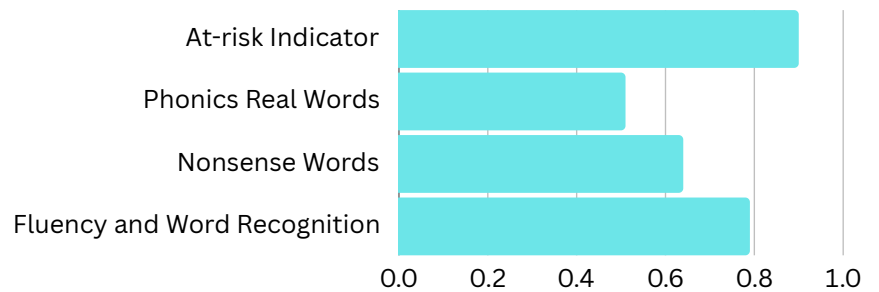
Location: Multiple States

Population: Urban
Economically
Disadvantaged

Validity of the MindPlay Dyslexia Screener

In 2021 data was collected from four schools across the United States. The data from this study was used to make validity and reliability adjustments to the MindPlay Dyslexia Screener. Data from these schools was used to compare the MVRC and the KTEA test, as a form of validity testing. It had a sample of 37 K-3 students. The At-risk Indicator showed a .90 correlation coefficient for second and third-graders, a very strong relationship.

Correlation Coefficients by Test



Grades: College Aged
Students (N=6)

Test: Variety of
Standardized Tests

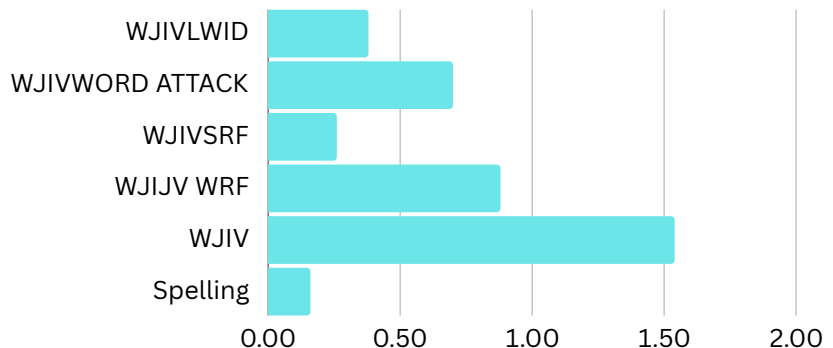
Location: Arizona

Population: Not available

Exploratory Study of MindPlay with College Students

This Arizona study compared differences between pre and post-scores for the Woodcock, TOWER, MSRV, and ASRA standardized assessments. The study utilized a sample size of 6 struggling college-aged readers. The duration and sample demographics for this study were not listed. A mean effect size of 0.65 was found.

Effect Sizes by Assessment Scale



Logic Model for MindPlay Reading

PROBLEM STATEMENT

To support the individual needs of each learner according to the Science of Reading skill progression, teachers need to determine the level and the next steps for their students. Without the right tools, determining students' gaps and building unique instructional paths can be time-consuming and take away from teachers' time working with their students.

RESOURCES

What resources are or could be available?

- Expert-developed content for the 5 Science of Reading components: Vocabulary, Phonics, Comprehension, Phonemic Awareness, Fluency
- Online access to materials: Universal Screener, Reading Fluency programs
- On-screen delivery of lessons by certified Speech Language Pathologists
- Access to streamlined technology
- Reporting dashboards that describe student progress and where they struggled during lessons
- Downloadable reading and writing resources and project-based lesson plans
- An underlying flow-chart structure defines the order in which lessons and practice activities are presented.

STRATEGIES & ACTIVITIES

What will the activities, events, and such be?

- Collaboration-focused onboarding, implementation, and ongoing technical support
- Professional development about effective teaching strategies in reading and writing
- Students complete the built-in MindPlay Universal Screener which identifies reading knowledge gaps
- Universal Screener builds assessment-driven paths
- Students complete lessons with systematic & cumulative instruction of concepts
- Multi-sensory, interactive lessons adapt to fit students' needs and emerging skills
- Students earn incremental rewards for their progress, play mini games, and track their achievement.
- Teachers can use reports as formative assessments to direct targeted instruction in the classroom.

OUTPUTS

What are the initial products of these activities?

- Students receive instruction on their individualized reading gaps and goals.
- Clear, explicit, sequential teaching prevents misconceptions & confusion.
- Students complete new lessons in chunks to reduce frustration
- Students experience new variations of instructional strategies following previous mistakes to support learning.
- Students receive continuous feedback for error correction and reinforcement.
- Students practice opportunities allow for students to achieve mastery
- Students create customizable avatars, home screens, and app themes for increased engagement.
- Children can learn at school or home, allowing continuity of access to individualized learning.
- Teachers inform ongoing observational assessments, set goals and monitor progress, and tailor their instructional efforts to support skill development.
- Teachers have skill-specific information to share with families about academic progress

SHORT-TERM AND INTERMEDIATE OUTCOMES

- Students learn to read in a supported environment that allows them to build a foundation for reading success.
- Students build their vocabulary by improving their ability to build, store, and retrieve the meanings of words.
- Students grow their phonics skills by connecting speech sounds to letters and accessing them by sight.
- Students strengthen their comprehension skills and can deduce meaning from text.
- Students grow their phonemic awareness skills, learning to recognize and manipulate sounds within words.
- Students develop their reading fluency, improving their reading ability with speed and accuracy.
- Teachers more successfully differentiate instruction for all learners
- Teachers reduce the amount of time assessing students
- Parents can watch as their child continues to develop reading skills
- The reading knowledge gap between students who have different educational backgrounds is narrowed

LONG-TERM OUTCOMES AND IMPACTS

- Students maintain grade-level proficiency, reducing costs and associated services
- Schools and districts improve literacy outcomes for all students.
- Students develop a lifelong love of reading
- Students are empowered to succeed in other areas of school.
- Students achieve their desired goals, live to their full potential, and participate in our democratic governance.
- Economic and social benefits of reading, such as reduced drop-out rate and increased employment opportunities appear

ASSUMPTIONS

- Teachers and administrators will be open to changing their use of digital materials as part of reading instruction.
- Leadership has the skills to enable the cultural shift towards online materials and data-driven teaching, including the management of change happening in the school community.
- Access to a device and internet with the recommended bandwidth

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LXD Research is an independent research firm that evaluates educational programs with ESSA-aligned methods.

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